08 50 00 • WINDOWS

SECTION INCLUDES

08 51 13 Metal Windows
08 52 16 Vinyl/Aluminum Clad Wood Windows
08 53 13 Solid Fiberglass and Vinyl Windows
08 61 00 Wood Windows (Historic Preservation only)

RELATED SECTIONS

02 09 00 Lead Based Paint Abatement
06 10 00 Rough Carpentry
06 20 00 Finish Carpentry
07 20 00 Insulation
07 40 00 Siding
07 62 00 Flashing and Trim
07 90 00 Sealants
09 90 00 Painting

Filed Sub Bid

M.G.L. c.149 §44F

Metal Windows *is a stipulated filed sub-bid category under M.G.L. Chapter 149, §44F. If the project total cost is $100,000.00 or greater and the cumulative estimated value of the work in this section exceeds $20,000, it triggers the filed sub-bid requirement.*

Wood, Fiberglass and Vinyl windows are not required filed sub-bid categories.

CODES AND STANDARDS

Project window performance ratings should be as follows:

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION AAMA
WWW.AAMANET.ORG

- ❑ Elderly for one to three stories R 40
- ❑ Family for one to three stories R 40
- ❑ Mid rise for three to four stories R 40
- ❑ High- rise for five and above stories LC 60

Windows should meet all Massachusetts Building Code requirements including labeling by the **NATIONAL FENESTRATION RATING COUNCIL NFRC**
WWW.NFRC.ORG

Windows should also be:

- ❑ Unit construction Class CBA rating, and
- ❑ EnergyStar Qualified
  www.energystar.gov/index.cfm?c=windows_doors.pr_windows

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DESIGN

Double-hung windows are strongly preferred where possible.

Operating force measured after the application of all trim and insulation should be:

- ❑ Families — 35lb in either direction
- ❑ Elderly or barrier-free — 15lb in either direction with a minimum breakaway force of 15 lb.

Installed windows requiring greater force for operating must be readjusted to comply with operating force limits.

Windows will also be subject to field testing of breakaway force.

Avoid sliding windows; they have typically been energy inefficient and difficult to operate. Also, avoid casement windows, especially for families. Both sliding and casement windows are high maintenance items.

To ensure easy operation in elderly and barrier-free units, the window stool for double-hung windows should be no deeper than 6 inches.

Half screens are preferred; but in some rare instances full screens will be more convenient.

Heavy duty security screens may be a required at selective urban developments.

Air conditioner sleeves should be avoided. However, they might be considered for a window replacement job where the number of existing windows does not allow for at least one window to open if the a/c unit is installed in the window opening.

Storm windows are not necessary unless uninsulated windows are retained as part of a rehabilitation project.

Finger pulls are required.

INVESTIGATION AND RESEARCH

When replacing windows check for weight pockets. Insulate voids and weight pockets around windows with fiberglass insulation, backer rods, and caulk, or with backer rods and acoustic caulk. This requirement must be clearly spelled out in the specifications.

Check for prior water infiltration or insect damage around windows and include work to repair any possible hidden structural damage under other specification sections.

WOOD - ALUMINUM AND VINYL CLAD WINDOWS

MATERIALS

Acceptable windows include vinyl clad Andersen Corporation, Perma-Shield Double-Hung, Pella aluminum clad windows and Marvin Clad windows.

Manufacturers that match or exceed the advertised air infiltration and water penetration performance for Andersen, Pella, and Marvin products are acceptable.

Factory prefinishing of the interior of sash is preferred. Prefinishing is a special order that must be included in the specifications. Coordinate with the painting specifications.

Screens should be aluminum framed insect screens (for durability). Charcoal colored aluminum mesh is generally the most aesthetically pleasing.

Replacement Sash - Andersen Window Corporation has replacement sash kits available for projects with their Andersen Narrowline windows that were manufactured before 1970. These sash replacement kits can be provided in Prefinished units and have accessories such as finger pulls available for ease of window operation.

These replacement units can be ordered as part of a total project replacement or in quantities that can be installed by LHA maintenance staff.

ALUMINUM WINDOWS

DESIGN

Limit the use of aluminum windows to situations where oversized or structural concerns are a major factor.

Double-hung windows are preferred – Sliders should be avoided.

Design a metal flashing pan and head and jamb flashing system to minimize the possibility of water infiltration. This is especially necessary in applications near the ocean or other buildings subject to higher winds, such as buildings over 3 stories.

MATERIALS

When specifying aluminum windows give serious consideration to C60 or better rated window.

Use the manufacturer's standard weatherstripping.

Specify a durable, aliphatic paint type finish (for example Kynar)

EXECUTION

Insulate around windows with fiberglass insulation, backer rod, and caulk, or with backer rod and acoustic caulk. This requirement must be clearly spelled out in the specifications.

See section 07 90 00 - Sealants for window sealant information.

FIBERGLASS AND VINYL WINDOWS

MATERIALS

GENERAL ISSUES

Windows meeting AMA standards are required.
All extrusions shall be fiberglass or 100% virgin PVC.
Nailing fin installation is preferred in new construction and where applicable on replacement windows.

❑ FRAME:

Overall depth 3 ¼" minimum
Minimum vinyl extrusion thickness of .065"
Welded frame preferred
Sloped sill preferred - pocket sill discouraged unless required for Grade 60 rating
Provide for A/C support blocks to avoid window frame damage

❑ SASH:

4 point welded sash preferred
Minimum vinyl extrusion thickness of .065"
Metal reinforcing at meeting rails
Adjustable cam locks (Minimum of 2 per sash if sash is over 36" wide)
Interlocking Sash
Double Weatherstripping
Tilt-in sash
2 spring loaded sash releases, latches on each sash

❑ BALANCES:

Block and tackle or ¾" constant force balances preferred - Spiral balances are not acceptable.

❑ GLAZING

AAMA approved glass - IGMA certified www.IGMAonline.org
Double Strength Glass
Low E glass – Argon is not recommended
Minimum 7/8" thickness
Warm edge technology preferred
Window grids should be directly applied to glazing or between the glass.

❑ SCREEN

Aluminum framed half screen
Charcoal finish aluminum
When using locking clips aluminum is required - avoid plastic

FLASHING DETAILS

All windows in new construction and in retrofits where it is feasible should be flashed with a flashig tape type product similar to Dupont FlexWrap and StraightFlash, Carlysis Window & Door Flashing, or W.R. Grace Vycor or Vycor Plus.

Windows in buildings over 3 stories should always have a pan flashing system installed prior to installing the new window.

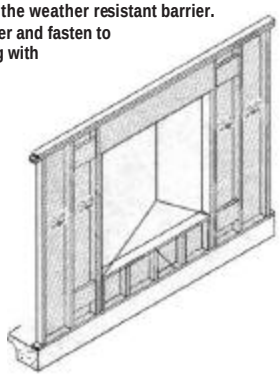
Recommended Flashing Details can also be found at the following URL:

http://www.wateroutflashing.com/products.htm

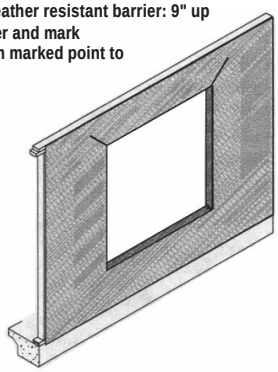
Typical Flashing Detail for installation of windows in new Wood framed Construction can be found on the next page.

TYPICAL FLASHING DETAIL IN WOOD FRAMING

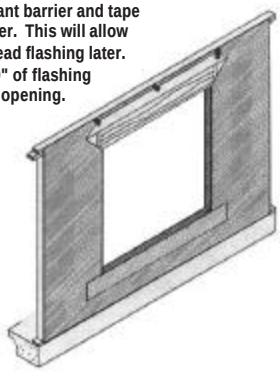
1. Make a modified "I-cut" in the weather resistant barrier. Fold bottom and side flaps over and fasten to interior side of rough opening with staples set 12" to 18" apart.



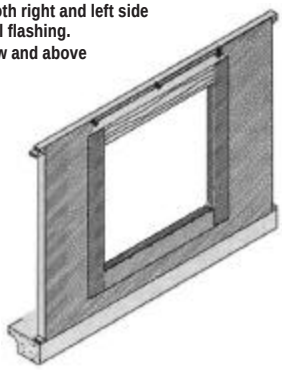
2. Measure for diagonal cuts in weather resistant barrier: 9" up from corner and 9" over from corner and mark (45° diagonal). Cut on diagonal from marked point to rough opening corner



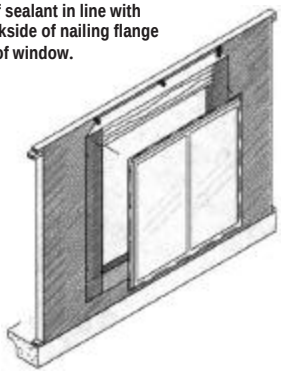
3. Gently raise weather resistant barrier and tape temporarily at corners and center. This will allow for the installation of window head flashing later. Apply flashing at sill allowing 9" of flashing material on eitherside of rough opening.



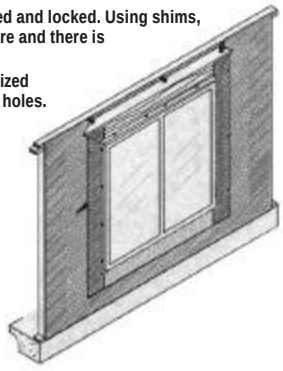
4. Next, apply jamb flashing on both right and left side over-lapping previously applied sill flashing. Flashing should extend 8-1/2" below and above rough opening.



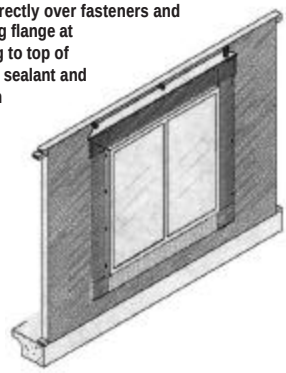
5. Apply 3/8" nominal bead of sealant in line with pre-punched nail slots on backside of nailing flange around the entire perimeter of window.



6. Be sure window sash are closed and locked. Using shims, be sure window is plumb and square and there is an equal reveal around the unit. Secure window using 1-3/4" galvanized roofing nails through pre-punched holes. Nail every hole.



7. Apply a bead of sealant directly over fasteners and pre-punched holes in mounting flange at top of window. Apply flashing to top of window pressing flashing into sealant and letting flashing extend 10" on left and right side of rough opening.



8. Remove temporary tape applied in step 3 and allow weather resistant barrier to lie flat over the head flashing. Apply new sheathing tape over the entire diagonal cut made in the weather resistant barrier as shown